

AMENDMENT

IN THE CLAIMS:

Please amend the claims as follows:

1. (Canceled)
2. (Currently amended) The substrate processing apparatus according to ~~claim 1~~ claim 8, wherein
the object is at least a part of a processing vessel in which a substrate received therein is processed.
3. (Original) The substrate processing apparatus according to claim 2, wherein
the substrate is processed in the processing vessel with the use of a plasma.
4. (Original) The substrate processing apparatus according to claim 3, further comprising a heater that heats the object, at least when no plasma is generated.
5. (Original) The substrate processing apparatus according to claim 2, further comprising a heating furnace that receives the processing vessel, wherein
the mist passage is formed as a space defined between the processing vessel and the furnace.
- 6-7. (Canceled)
8. (Currently amended) ~~The substrate processing apparatus according to claim 6, wherein A~~
substrate processing apparatus for processing a substrate for manufacturing a semiconductor device, comprising an object to be cooled, the apparatus further comprising:
a mist generator that generates a mist;
a carrier-gas supply source that supplies a carrier gas for carrying the mist generated in

the mist generator;

a mist passage through which the mist carried by the carrier gas flows to cool the object;

a temperature sensor that detects a temperature of the object; and

a controller that controls the mist generator and the gas supply source, based on a

temperature detected by the temperature sensor;

the controller carries out a control operation to stop a generation supply of the mist by from the mist generator, while continuing a supply of the carrier gas from the gas supply source, when the detected temperature of the temperature sensor is not more than a reference value.

9. (Canceled)

10. (Currently Amended) ~~The~~ A substrate processing apparatus ~~according to claim 1, for~~
processing a substrate for manufacturing a semiconductor device, comprising an object to be
cooled, the apparatus further comprising:

a mist generator that generates a mist;

a carrier-gas supply source that supplies a carrier gas for carrying the mist generated in

the mist generator;

a mist passage through which the mist carried by the carrier gas flows to cool the object;

and

a gas-liquid separator that separates the mist circulated in the mist passage from the carrier gas, and collects the separated mist as a liquid,

wherein

the mist generator generates the mist from the liquid collected by the separator.